CLAIMS

1. A method of treatment for myocardial infarction, stroke or PAOD or susceptibility to myocardial infarction, stroke or PAOD in an individual, comprising administering a leukotriene synthesis inhibitor to the individual in need thereof, in a therapeutically effective amount.

2. The method of Claim 1, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for myocardial infarction, stroke or PAOD; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

3. The method of Claim 1, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

4. The method of Claim 1, wherein the individual has at least one risk factor selected from the group consisting of: a transient ischemic attack; transient monocular blindness; carotid endarterectomy; and asymptomatic carotid stenosis.

5. The method of Claim 1, wherein the individual has at least one risk factor selected from the group consisting of: claudication, limb ischemia leading to gangrene, ulceration or amputation; and a revascularization procedure.

6. The method of Claim 1, wherein the individual has an elevated inflammatory marker.

7. The method of Claim 6, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

8. The method of Claim 1, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

9. The method of Claim 1, wherein the individual has increased leukotriene synthesis.

10. The method of Claim 1, wherein the individual has had at least one previous myocardial infarction or ACS event, or has stable angina.

11. The method of Claim 1, wherein the individual has had at least one previous transient ischemic attack, transient monocular blindness, or stroke.

12. The method of Claim 1, wherein the individual has asymptomatic carotid stenosis or has had a carotid endarterectomy.

13. The method of Claim 1, wherein the individual has had a revascularization procedure.

14. The method of Claim 1, wherein the individual has atherosclerosis or who requires treatment (*e.g.*, angioplasty, stents, revascularization procedure) to restore blood flow in arteries.

15. The method of Claim 1, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

16. The method of Claim 1, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

17. The method of Claim 1, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

18. The method of Claim 1, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

19. The method of Claim 1, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

20. The method of Claim 1, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

21. The method of Claim 20, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

22. The method of Claim 1, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

23. The method of Claim 22, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

24. A method of treatment for acute coronary syndrome in an individual, comprising administering leukotriene synthesis inhibitor to the individual, in a therapeutically effective amount.

25. The method of Claim 24, wherein the acute coronary syndrome is selected from the group consisting of: unstable angina, non-ST-elevation myocardial infarction (NSTEMI) and ST-elevation myocardial infarction (STEMI).

26. The method of Claim 24, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for myocardial infarction; an at-risk haplotype in the FLAP gene; a

polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

27. The method of Claim 24, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

28. The method of Claim 24, wherein the individual has an elevated inflammatory marker.

29. The method of Claim 28, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

30. The method of Claim 24, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

31. The method of Claim 24, wherein the individual has increased leukotriene synthesis.

32. The method of Claim 24, wherein the individual has had at least one previous myocardial infarction or ACS event, or has stable angina.

33. The method of Claim 24, wherein the individual has atherosclerosis or who requires treatment (*e.g.*, angioplasty, stents, revascularization procedure) to restore blood flow in arteries.

34. The method of Claim 24, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

35. The method of Claim 24, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

36. The method of Claim 24, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

37. The method of Claim 24, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

38. The method of Claim 24, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

39. The method of Claim 24, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

40. The method of Claim 39, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

41. The method of Claim 24, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

42. The method of Claim 41, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

43. A method of treatment for transient ischemic attack, transient monocular blindness or stroke in an individual, comprising administering leukotriene synthesis inhibitor to the individual, in a therapeutically effective amount.

44. The method of Claim 43, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for stroke; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

45. The method of Claim 43, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension;

hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

46. The method of Claim 43, wherein the individual has an elevated inflammatory marker.

47. The method of Claim 46, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

48. The method of Claim 43, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

49. The method of Claim 43, wherein the individual has increased leukotriene synthesis.

50. The method of Claim 43, wherein the individual has had at least one previous transient ischemic attack, transient monocular blindness or stroke.

51. The method of Claim 43, wherein the individual has asymptomatic carotid stenosis or has had a carotid endarterectomy.

52. The method of Claim 43, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-

quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

53. The method of Claim 43, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

54. The method of Claim 43, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

55. The method of Claim 43, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

56. The method of Claim 43, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

57. The method of Claim 43, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

58. The method of Claim 58, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

59. The method of Claim 43, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

60. The method of Claim 59, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

61. A method of treatment of PAOD or claudication, comprising administering leukotriene synthesis inhibitor to the individual, in a therapeutically effective amount.

62. The method of Claim 61, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for PAOD; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

63. The method of Claim 61, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

64. The method of Claim 61, wherein the individual has an elevated inflammatory marker.

65. The method of Claim 64, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum

amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

66. The method of Claim 61, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

67. The method of Claim 61, wherein the individual has increased leukotriene synthesis.

68. The method of Claim 61, wherein the individual has been diagnosed previously with a condition selected from the group consisting of: PAOD, claudication, and limb ischemia leading to gangrene, ulceration or amputation.

69. The method of Claim 61, wherein the individual has had a vascular or peripheral artery revascularization graft.

70. The method of Claim 61, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

71. The method of Claim 61, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

72. The method of Claim 61, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

73. The method of Claim 61, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

74. The method of Claim 61, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

75. The method of Claim 61, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

76. The method of Claim 75, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

77. The method of Claim 61, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

78. The method of Claim 77, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

79. A method of decreasing risk of a subsequent myocardial infarction or stroke in an individual who has had at least one myocardial infarction or stroke, comprising administering a leukotriene synthesis inhibitor to the individual, in a therapeutically effective amount.

80. The method of Claim 79, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for myocardial infarction or stroke; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

81. The method of Claim 79, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

82. The method of Claim 79, wherein the individual has at least one risk factor selected from the group consisting of: a transient ischemic attack; transient monocular blindness; carotid endarterectomy; and asymptomatic carotid stenosis.

83. The method of Claim 79, wherein the individual has an elevated inflammatory marker.

84. The method of Claim 83, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite,

interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

85. The method of Claim 79, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

86. The method of Claim 79, wherein the individual has increased leukotriene synthesis.

87. The method of Claim 79, wherein the individual has had at least one previous myocardial infarction or ACS event, or has stable angina.

88. The method of Claim 79, wherein the individual has had at least one previous transient ischemic attack, transient monocular blindness or stroke.

89. The method of Claim 79, wherein the individual has asymptomatic carotid stenosis or has had a carotid endarterectomy.

90. The method of Claim 79, wherein the individual has atherosclerosis or who requires treatment (*e.g.*, angioplasty, stents, revascularization procedure) to restore blood flow in arteries.

91. The method of Claim 79, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-

Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

92. The method of Claim 79, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

93. The method of Claim 79, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

94. The method of Claim 79, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

95. The method of Claim 79, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

96. The method of Claim 79, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

97. The method of Claim 96, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

98. The method of Claim 79, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

99. The method of Claim 98, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

100. A method of treatment for atherosclerosis or PAOD in an individual, comprising administering a leukotriene synthesis inhibitor to the individual, in a therapeutically effective amount.

101. The method of Claim 100, wherein the individual is concurrently treated to restore blood flow in coronary, carotid or peripheral arteries.

102. The method of Claim 100, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for PAOD; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

103. The method of Claim 100, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

104. The method of Claim 100, wherein the individual has at least one risk factor selected from the group consisting of: claudication, limb

ischemia leading to gangrene, ulceration or amputation; and a vascular or peripheral artery revascularization graft.

105. The method of Claim 100, wherein the individual has an elevated inflammatory marker.

106. The method of Claim 105, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

107. The method of Claim 100, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

108. The method of Claim 100, wherein the individual has increased leukotriene synthesis.

109. The method of Claim 100, wherein the individual has been diagnosed previously with a condition selected from the group consisting of: claudication, and limb ischemia leading to gangrene, ulceration or amputation.

110. The method of Claim 100, wherein the individual has had a vascular or peripheral artery revascularization graft.

111. The method of Claim 100, wherein the individual has atherosclerosis or who requires treatment (*e.g.*, angioplasty, stents, revascularization procedure) to restore blood flow in arteries.

112. The method of Claim 100, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

113. The method of Claim 100, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

114. The method of Claim 100, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

115. The method of Claim 100, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

116. The method of Claim 100, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

117. The method of Claim 100, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

118. The method of Claim 117, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

119. The method of Claim 100, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

120. The method of Claim 119, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

121. A method of reducing leukotriene synthesis in an individual, comprising administering a leukotriene synthesis inhibitor to the individual in a therapeutically effective amount.

122. The method of Claim 121, wherein the individual is concurrently treated to restore blood flow in coronary, carotid or peripheral arteries.

123. The method of Claim 121, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for myocardial infarction, stroke or PAOD; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

124. The method of Claim 121, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

125. The method of Claim 121, wherein the individual has at least one risk factor selected from the group consisting of: a transient ischemic attack; transient monocular blindness; carotid endarterectomy; and asymptomatic carotid stenosis.

126. The method of Claim 121, wherein the individual has at least one risk factor selected from the group consisting of: claudication, limb ischemia leading to gangrene, ulceration or amputation; and a vascular or peripheral artery revascularization graft.

127. The method of Claim 121, wherein the individual has an elevated inflammatory marker.

128. The method of Claim 127, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

129. The method of Claim 121, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

130. The method of Claim 121, wherein the individual has increased leukotriene synthesis.

131. The method of Claim 121, wherein the individual has had at least one previous myocardial infarction or ACS event, or has stable angina.

132. The method of Claim 121, wherein the individual has had at least one previous transient ischemic attack, transient monocular blindness or stroke.

133. The method of Claim 121, wherein the individual has asymptomatic carotid stenosis or has had a carotid endarterectomy.

134. The method of Claim 121, wherein the individual has had a vascular or peripheral artery revascularization graft.

135. The method of Claim 121, wherein the individual has atherosclerosis or who requires treatment (*e.g.*, angioplasty, stents, revascularization procedure) to restore blood flow in arteries.

136. The method of Claim 121, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

137. The method of Claim 121, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

138. The method of Claim 121, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

139. The method of Claim 121, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

140. The method of Claim 121, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

141. The method of Claim 121, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

142. The method of Claim 141, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

143. The method of Claim 121, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

144. The method of Claim 143, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.

145. The method of any one of Claims 1-144, wherein the leukotriene synthesis inhibitor is an agent set forth in the Agent Table.

146. The method of any one of Claims 1-144, wherein the leukotriene synthesis inhibitor is an agent selected from the group consisting of: a complement of a nucleic acid encoding a member of the leukotriene pathway; a binding agent of a member of the leukotriene pathway; an agent that alters expression of a nucleic acid encoding a member of the leukotriene pathway; an agent that alters posttranslational processing of a member of the leukotriene pathway; an agent that alters activity of a polypeptide member of the leukotriene pathway; an agent that alters activity of a leukotriene; an antibody to a leukotriene; and an agent that alters interaction among two or more members of the leukotriene pathway.

147. The method of any one of Claims 1-144, wherein the leukotriene synthesis inhibitor is an agent selected from the group consisting of: a FLAP nucleic acid binding agent; a 5-lipoxygenase binding agent; a leukotriene synthetase binding agent; a FLAP nucleic acid binding agent; a 5-liopoxygenase nucleic acid binding agent; a leukotriene synthetase nucleic acid binding agent; a peptidomimetic; a fusion protein; a prodrug; an antibody; an agent that alters FLAP nucleic acid expression; an agent that alters activity of a polypeptide encoded by a FLAP nucleic acid, a 5-lipoxygenase nucleic acid, or a leukotriene synthetase nucleic acid; an agent that alters posttranscriptional processing of a polypeptide encoded by a FLAP nucleic acid, a 5-lipoxygenase nucleic acid or a leukotriene synthetase nucleic acid; an

agent that alters interaction of a FLAP nucleic acid with a FLAP nucleic acid binding agent; an agent that alters interaction of a 5-lipoxygenase nucleic acid with a 5-lipoxygenase nucleic acid binding agent; an agent that alters interaction of a leukotriene synthetase nucleic acid with a leukotriene synthetase nucleic acid binding agent; an agent that alters transcription of splicing variants encoded by a FLAP nucleic acid, a 5-lipoxygenase nucleic acid, or a leukotriene synthetase nucleic acid; and ribozymes.

148. A method of assessing an individual for an increased risk of MI, comprising assessing the level of a leukotriene metabolite in the individual, wherein an increased level of leukotriene metabolite is indicative of an increased risk of MI.

149. The method of Claim 148, wherein the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4, and LTB4.

150. The method of Claim 148, wherein the level of the leukotriene metabolite is measured in blood, serum, plasma or urine.

151. A method of assessing an individual for an increased risk of ACS, comprising assessing the levels of leukotriene metabolites in the individual, wherein an increased level of leukotriene metabolites is indicative of an increased risk of ACS.

152. The method of Claim 151, wherein the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

153. The method of Claim 151, wherein the level of the leukotriene metabolite is measured in blood, serum, plasma or urine.

154. A method of assessing an individual for an increased risk of atherosclerosis, comprising assessing the levels of leukotriene metabolites in the individual, wherein an increased level of leukotriene metabolites is indicative of an increased risk of atherosclerosis.

155. The method of Claim 154, wherein the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

156. The method of Claim 154, wherein the level of the leukotriene metabolite is measured in blood, serum, plasma or urine.

157. A method of assessing an individual for an increased risk of stroke, transient ischemic attack, transient monocular blindness or asymptomatic carotid stenosis, comprising assessing the level of a leukotriene metabolite in the individual, wherein an increased level of leukotriene metabolites is indicative of an increased risk of stroke, transient ischemic attack, transient monocular blindness or asymptomatic carotid stenosis.

158. The method of Claim 157, wherein the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

159. The method of Claim 157, wherein the level of the leukotriene metabolite is measured in blood, serum, plasma or urine.

160. A method of assessing an individual for an increased risk of PAOD, claudication, or limb ischemia, comprising assessing the level of a leukotriene metabolite in the individual, wherein an increased level of leukotriene metabolites is indicative of an increased risk of PAOD, claudication, or limb ischemia.

161. The method of Claim 160, wherein the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

162. The method of Claim 160, wherein the level of the leukotriene metabolite is measured in blood, serum, plasma or urine.

163. A method of assessing an individual for an increased risk of MI, comprising:

i. stimulating production of a leukotriene or a leukotriene metabolite in a test sample from the individual, using a calcium ionophore;

ii. comparing the level of production of the leukotriene or leukotriene metabolite with a control level,

wherein a level of production of the leukotriene or leukotriene metabolite that is significantly greater than the control level, is indicative of an increased risk of MI.

164. The method of Claim 163, wherein a level of a leukotriene metabolite is compared, and the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4, and LTB4.

165. The method of Claim 163, wherein the test sample comprises neutrophils.

166. A method of assessing an individual for an increased risk of ACS, comprising:

i. stimulating production of a leukotriene or a leukotriene metabolite in a test sample from the individual, using a calcium ionophore;

ii. comparing the level of production of the leukotriene or leukotriene metabolite with a control level,

wherein a level of production of the leukotriene or leukotriene metabolite that is significantly greater than the control level, is indicative of an increased risk of ACS.

167. The method of Claim 166, wherein a level of a leukotriene metabolite is compared, and the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

168. The method of Claim 166, wherein test sample comprises neutrophils.

169. A method of assessing an individual for an increased risk of atherosclerosis, comprising:

i. stimulating production of a leukotriene or a leukotriene metabolite in a test sample from the individual, using a calcium ionophore;

ii. comparing the level of production of the leukotriene or leukotriene metabolite with a control level,

wherein a level of production of the leukotriene or leukotriene metabolite that is significantly greater than the control level, is indicative of an increased risk of atherosclerosis.

170. The method of Claim 169, wherein a level of a leukotriene metabolite is compared, and the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

171. The method of Claim 169, wherein the test sample comprises neutrophils.

172. A method of assessing an individual for an increased risk of stroke, transient ischemic attack, transient monocular blindness or asymptomatic carotid stenosis, comprising:

i. stimulating production of a leukotriene or a leukotriene metabolite in a test sample from the individual, using a calcium ionophore;

ii. comparing the level of production of the leukotriene or a leukotriene metabolite with a control level,

wherein a level of production of the leukotriene or leukotriene metabolite that is significantly greater than the control level, is indicative of an increased risk of stroke, transient ischemic attack, transient monocular blindness or asymptomatic carotid stenosis.

173. The method of Claim 172, wherein a level of a leukotriene metabolite is compared, and the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

174. The method of Claim 172, wherein test sample comprises neutrophils.

175. A method of assessing an individual for an increased risk of PAOD, claudication, or limb ischemia, comprising:

i. stimulating production of a leukotriene or a leukotriene metabolite in a test sample from the individual, using a calcium ionophore;

ii. comparing the level of production of the leukotriene or leukotriene metabolite with a control level,

wherein a level of production of the leukotriene or leukotriene metabolite that is significantly greater than the control level, is indicative of an increased risk of PAOD, claudication, or limb ischemia.

176. The method of Claim 175, wherein a level of a leukotriene metabolite is compared, and the leukotriene metabolite is selected from the group consisting of: LTE4, LTD4 and LTB4.

177. The method of Claim 175, wherein test sample comprises neutrophils.

178. A method of assessing response to treatment with a leukotriene synthesis inhibitor by an individual in a target population, comprising:

a) assessing the level of a leukotriene or leukotriene metabolite in the individual before treatment with a leukotriene synthesis inhibitor;

b) assessing the level of the leukotriene or leukotriene metabolite in the individual during or after treatment with the leukotriene synthesis inhibitor;

c) comparing the level of the leukotriene or leukotriene metabolite before treatment with the level of the leukotriene or leukotriene metabolite during or after treatment,

wherein a level of the leukotriene or leukotriene metabolite during or after treatment that is significantly lower than the level of the leukotriene or leukotriene metabolite before treatment, is indicative of efficacy of treatment with the leukotriene synthesis inhibitor.

179. The method of Claim 106, wherein the level of the leukotriene in steps (a) and (b) is assessed by measurement of *ex vivo* production of the leukotriene in a sample from the individual.

180. A method of assessing response to treatment with a leukotriene synthesis inhibitor by an individual in a target population, comprising:

a) stimulating production of a leukotriene or a leukotriene metabolite in a first test sample from the individual, using a calcium ionophore, before treatment with a leukotriene synthesis inhibitor;

b) stimulating production of a leukotriene or a leukotriene metabolite in a second test sample from the individual, using a

calcium ionophore, during or after treatment with the leukotriene synthesis inhibitor;

c) comparing the level of production the leukotriene or leukotriene metabolite in the first test sample with the level of production of the leukotriene or leukotriene metabolite in the second test sample,

wherein a level of the leukotriene or leukotriene metabolite in the second test sample that is significantly lower than the level of the leukotriene or leukotriene metabolite in the first test sample, is indicative of efficacy of treatment with the leukotriene synthesis inhibitor.

181. A method of assessing response to treatment with a leukotriene synthesis inhibitor, by an individual in a target population, comprising:

a) assessing the level of an inflammatory marker in the individual before treatment with a leukotriene synthesis inhibitor;

b) assessing the level of the inflammatory marker in the individual during or after treatment with the leukotriene synthesis inhibitor;

c) comparing the level of the inflammatory marker before treatment with the level of the inflammatory marker during or after treatment,

wherein a level of the inflammatory marker during or after treatment that is significantly lower than the level of inflammatory marker before treatment, is indicative of efficacy of treatment with the leukotriene synthesis inhibitor.

182. The method of Claim 181, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite (*e.g.*, cysteinyl leukotriene 1), interleukin-6, tissue necrosis factor-alpha, soluble vascular cell adhesion molecules (sVCAM), soluble

intervascular adhesion molecules (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

183. A method of preventing MI, stroke or PAOD, in an individual with an ankle/brachial index less than 0.9, comprising: administering a leukotriene synthesis inhibitor to the individual in need thereof, in a therapeutically effective amount.

184. The method of Claim 183, wherein the individual has at least one risk factor selected from the group consisting of: an at-risk haplotype for myocardial infarction, stroke or PAOD; an at-risk haplotype in the FLAP gene; a polymorphism in a FLAP nucleic acid; and an at-risk polymorphism in the 5-LO gene promoter.

185. The method of Claim 183, wherein the individual has at least one risk factor selected from the group consisting of: diabetes; hypertension; hypercholesterolemia; elevated triglycerides; elevated lp(a); obesity; ankle/brachial index (ABI) less than 0.9; and past or current smoker.

186. The method of Claim 183, wherein the individual has at least one risk factor selected from the group consisting of: a transient ischemic attack; transient monocular blindness; carotid endarterectomy; and asymptomatic carotid stenosis.

187. The method of Claim 183, wherein the individual has at least one risk factor selected from the group consisting of: claudication, limb ischemia leading to gangrene, ulceration or amputation; and a revascularization procedure.

188. The method of Claim 183, wherein the individual has an elevated inflammatory marker.

189. The method of Claim 188, wherein the inflammatory marker is selected from the group consisting of: C-reactive protein (CRP), serum amyloid A, fibrinogen, a leukotriene, a leukotriene metabolite, interleukin-6, tissue necrosis factor-alpha, a soluble vascular cell adhesion molecule (sVCAM), a soluble intervascular adhesion molecule (sICAM), E-selectin, matrix metalloprotease type-1, matrix metalloprotease type-2, matrix metalloprotease type-3, matrix metalloprotease type-9, myeloperoxidase (MPO) and N-tyrosine.

190. The method of Claim 183, wherein the individual has increased LDL cholesterol and/or decreased HDL cholesterol.

191. The method of Claim 183, wherein the individual has increased leukotriene synthesis.

192. The method of Claim 183, wherein the individual has had at least one previous myocardial infarction or ACS event, or has stable angina.

193. The method of Claim 183, wherein the individual has had at least one previous transient ischemic attack, transient monocular blindness, or stroke.

194. The method of Claim 183, wherein the individual has asymptomatic carotid stenosis or has had a carotid endarterectomy.

195. The method of Claim 183, wherein the individual has had a revascularization procedure.

196. The method of Claim 183, wherein the individual has atherosclerosis or who requires treatment (*e.g.*, angioplasty, stents, revascularization procedure) to restore blood flow in arteries.

197. The method of Claim 183, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: 1-((4-chlorophenyl)methyl)-3-((1,1-dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)- 1H-Indole-2-propanoic acid otherwise known as MK-0591, (R)-(+)-alpha-cyclopentyl-4-(2-quinolinylmethoxy)-Benzeneacetic acid otherwise known as BAY-x-1005, 3-(3-(1,1-dimethylethylthio-5-(quinoline-2-ylmethoxy)-1-(4-chloromethylphenyl)indole-2-yl)-2,2-dimethylpropionaldehyde oxime-0-2-acetic acid otherwise known as A-81834, optically pure enantiomers, salts, chemical derivatives, and analogues.

198. The method of Claim 183, wherein the leukotriene synthesis inhibitor is selected from the group consisting of: zileuton, atreleuton, 6-((3-fluoro-5-(tetrahydro-4-methoxy-2H-pyran-4yl)phenoxy)methyl)-1-methyl-2(1H)-quinlolinone otherwise known as ZD-2138, 1-((4-chlorophenyl)methyl)-3-((1,1dimethylethyl)thio)-alpha,alpha-dimethyl-5-(2-quinolinylmethoxy)-1H-Indole-2-propanoic acid otherwise known as MK-886, 4-(3-(4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl)-phenyl)-tetrahydro-pyran-4-carboxylic acid amide otherwise known as CJ-13610, their optically pure enantiomers, salts, chemical derivatives, and analogues.

199. The method of Claim 183, wherein the leukotriene synthesis inhibitor is a FLAP inhibitor or antagonist.

200. The method of Claim 183, wherein the leukotriene synthesis inhibitor is a 5-LO inhibitor or antagonist.

201. The method of Claim 183, wherein the leukotriene synthesis inhibitor is a leukotriene inhibitor or antagonist, or an antibody to a leukotriene.

202. The method of Claim 183, wherein the leukotriene synthesis inhibitor is a leukotriene receptor inhibitor or antagonist.

203. The method of Claim 202, wherein the leukotriene receptor inhibitor or antagonist is an agent that inhibits or antagonizes a receptor selected from the group consisting of: BLT1, BLT2, CysLTR1, and CysLTR2.

204. The method of Claim 183, wherein the leukotriene synthesis inhibitor is an inhibitor of a member of the leukotriene biosynthesis pathway.

205. The method of Claim 204, wherein the member of the leukotriene biosynthesis pathway is selected from the group consisting of: FLAP, 5-LO, LTC4S, LTA4H, and LTB4DH.